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1 Routine/Function Prologues

1.0.1 noah_soiltype.F90 (Source File: noah_soil_typ.F90)

This subroutine uses the percentages of sand and clay derived from the global soils dataset of Reynolds, Jackson, and Rawls [1999], to convert to Zobler soil class values to be used in NOAH LSM v2.5 in LDAS. (Original code by Matt Rodell, 3/7/01)

28 Apr 2002, K Arsenault: Added NOAH LSM to LDAS

INTERFACE:

```
subroutine soiltype(nc,nr,sand,clay,soiltyp)
```

CONTENTS:

```
do j=1,nr
  do i=1,nc
    if (clay(i,j) .lt. 0.00) then
      soiltyp(i,j) = -99
    else
      cl = clay(i,j)
      sa = sand(i,j)
    endif
!-----
!     identify texture class.
!-----
    if (cl .lt. 0.23) then
      if (sa .lt. 0.50) then
        soiltyp(i,j) = 8          ! loam
      else
        if (sa .lt. 0.75) then
          soiltyp(i,j) = 4        ! sandy loam
        else
          soiltyp(i,j) = 1        ! loamy sand
        end if
      end if
    else
      if (cl .lt. 0.28) then
        if (sa .lt. 0.45) then
          soiltyp(i,j) = 8          ! loam
        else
          soiltyp(i,j) = 7        ! sandy clay loam
        endif
      else
        if (cl .lt. 0.37) then
          if (sa .lt. 0.2) then
            soiltyp(i,j) = 2        ! silty clay loam
          else
            if (sa .lt. 0.43) then
              soiltyp(i,j) = 6        ! clay loam
            endif
          endif
        endif
      endif
    endif
  end do
end do
```

```
        else
            soiltyp(i,j) = 7      ! sandy clay loam
        end if
    end if
else
    if (cl .lt. 0.41) then
        if (sa .lt. 0.2) then
            soiltyp(i,j) = 2      ! silty clay loam
        else
            if (sa .lt. 0.43) then
                soiltyp(i,j) = 6      ! clay loam
            else
                soiltyp(i,j) = 5      ! sandy clay
            end if
        end if
    else
        if (sa .lt. 0.43) then
            soiltyp(i,j) = 3      ! light clay
        else
            soiltyp(i,j) = 5      ! sandy clay
        end if
    end if
end if
end if
end do
end do
```